

Foreword

This *Design Manual* is for use by Washington State Department of Transportation engineering personnel. It provides policies, procedures, and methods for developing and documenting the design of improvements to the transportation network in Washington. The *Design Manual* has been developed for state facilities and may not be appropriate for all county roads or city streets that are not state highways.

The manual supplements the engineering analyses and judgment that must be applied to improvement and preservation projects. It provides uniform procedures for documenting and implementing design decisions. When proposed designs meet the requirements contained in the *Design Manual*, little additional documentation is required. The Federal Highway Administration (FHWA) has agreed to approve designs that follow the guidance in the *Design Manual*; therefore following the guidance presented is mandatory for state highway projects.

The design environment changes rapidly, and often without warning to the practitioner. To track every change, and to make improvements based upon each change, is not feasible. The intent of this manual is to provide recommended values for critical dimensions. Flexibility is permitted to encourage independent design that is tailored to particular situations. When flexibility is applied, and critical dimensions of a proposed design do not meet the *Design Manual* criteria, additional documentation is required to record the decision-making process.

The addition of new or modified design criteria to the *Design Manual* through the revision process does not imply that existing features are deficient or inherently dangerous. Nor does it suggest or mandate immediate engineering review or initiation of new projects.

Cost-effective and environmentally conscious design is emphasized, and consideration of the use of the highway corridor by transit, pedestrians, and bicyclists is included. Designers are encouraged to view the highway corridor beyond the vehicular movement context. To accommodate multimodal use, the criteria provided for one mode is to be appropriately adapted, as needed, at individual locations.

The complexity of transportation design requires the designer to make fundamental trade-off decisions that balance competing considerations. Although weighing these considerations adds to the complexity of design, it accounts for the needs of a particular project and the relative priorities of various projects and programs. Improvements must necessarily be designed and prioritized in light of finite transportation funding.

Updating the *Design Manual* is a continuing process, and revisions are issued periodically. Questions, observations, and recommendations are invited. Page iii is provided to encourage comments and to assure their prompt delivery. For clarification of the content of the *Design Manual*, contact the Headquarters Design Office. The e-mail address is: DesignManual@wsdot.wa.gov .


Harold Peterfeso, P.E.
State Design Engineer